

THE ‘STRONSAY BEAST’: TESTIMONY, EVIDENCE AND AUTHORITY IN
EARLY NINETEENTH-CENTURY NATURAL HISTORY

by

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When an unknown sea creature was washed ashore on the Orkney Islands in September 1808, the Edinburgh anatomist John Barclay declared that this was the first solid scientific evidence for the existence of the ‘great sea snake’. The testimony of witnesses along with some of its preserved body parts were examined by both the Wernerian Natural History Society in Edinburgh and the surgeon and anatomist Everard Home in London. Contradicting Barclay’s opinion, Home identified the creature as a decomposing basking shark. While Barclay took the testimony of the local witnesses largely on trust and accepted their interpretation of the Beast, Home discounted it and instead asserted his own expert authority to correctly interpret the evidence. Both made use of the preserved physical remains of parts of the creature in strikingly different ways: Barclay to support the accounts of the witnesses, Home to undermine them. The debate between the two anatomists has much to tell us about the uses of evidence and testimony in early nineteenth-century natural history, but also has broader resonances for the roles of evidence and authority in science that still remain relevant today.

Keywords: John Barclay, Everard Home, sea serpent, natural history,
testimony, Wernerian Natural History Society

INTRODUCTION

In September 1808 a body was washed ashore at Rothiesholm Head in the estate of the merchant and agricultural improver Gilbert Laing Meason (1769–1832) on the island of Stronsay in the Orkney Islands, approximately 16 kilometres off Caithness on the north coast of Scotland.¹ News quickly spread of its discovery and curious inhabitants hurried to the spot to view the remains. The authorities were alerted and soon began an investigation of the case. The local justices of the peace took sworn testimony from witnesses who had seen the body. But this was not the human victim of some tragic accident or grisly crime.

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¹ The name of the island was often spelt ‘Stronsa’ in the early nineteenth century.

Instead the body appeared to be that of some outlandish creature unknown to the local people, familiar as they would have been with the rich marine fauna that surrounded their island home. The discovery of the ‘Stronsay Beast’, as it became known, soon aroused the curiosity of natural historians in far off Edinburgh and London. Two of the leading comparative anatomists of the day, John Barclay (1758–1826), anatomy lecturer and proprietor of Edinburgh’s most successful extra-mural anatomy school, and Everard Home (1756–1832), London surgeon and anatomist, came to radically different conclusions regarding the nature and affinities of the Beast based on the available evidence. Barclay first expressed his view in a meeting of Edinburgh’s leading natural history society, the Wernerian Natural History Society, on Saturday 14 January 1809, around two months after the discovery of the Beast had first been announced to the Society by its secretary, Patrick Neill (1776–1851), at an extraordinary meeting on 19 November 1808. Home presented his radically different interpretation of the Beast in a paper read to the Royal Society on 11 May 1809 and published in the *Philosophical Transactions* later that year. In answer to Home’s paper, Barclay wrote a lengthy defence of his own opinion regarding the Beast, which was published in the *Memoirs of the Wernerian Natural History Society* in 1811. This latter paper provides us with our most detailed account of the Beast and its discovery. The debate that took place between Barclay and Home sheds much light on attitudes to evidence, testimony and authority in post-Enlightenment natural history.

As D. Graham Burnett has shown in his study of a New York court case of 1818 that hinged on the place of the whale in the order of nature, more was at stake in debates on taxonomy in the early nineteenth century than animal classification. Such debates were ‘fundamentally about a human taxonomy as well, since it is not merely that out of the hubbub came the categories of “whale” and “fish”; out of the hubbub also came the categories of “scientist” and “layman”, “philosopher” and “fool”’.² Not only was the status of the witnesses and their testimony at stake in the case of the Stronsay Beast, but also that of the duelling anatomists, who staked their reputations on their ability to correctly identify the creature. The key questions I will be addressing here are: What kind of testimony from what kind of witness was considered valid? Who was qualified to make such judgements? And what role did the physical evidence and its representations play in confirming or refuting truth claims? These questions regarding the nature and locus of scientific authority are as relevant today as they were in the early nineteenth century.

For centuries sea serpents have occupied equivocal territory between mythological beast and real, if poorly attested, natural kind. As late as the mid-nineteenth century eminently respected natural historians such as Louis Agassiz and Charles Lyell believed in the existence of the great sea serpent and that the discovery of solid evidence for its existence was only a matter of time.³ There was indeed nothing inherently implausible about the idea that a large sea animal that had not yet been scientifically described existed somewhere in the vastness of the world’s oceans in the first half of the nineteenth century. However, most of the numerous sightings of giant unknown marine animals during the eighteenth and nineteenth centuries were not backed by any physical

2 D. Graham Burnett, *Trying Leviathan: the nineteenth-century New York court case that put the whale on trial and challenged the order of nature* (Princeton University Press, Princeton, 2007), p. 195.

3 Sherrie Lynne Lyons, *Species, serpents, spirits, and skulls: science at the margins in the Victorian Age* (State University of New York Press, New York, 2010), pp. 17–50.

evidence.⁴ The body washed ashore in the Orkneys in 1808 was therefore a case of exceptional interest. Crucially, parts of its body were even preserved and sent to some of the leading comparative anatomists of the day to examine.

When they came to give their opinions on the nature of the Beast, two main types of evidence were used by these anatomists to support their truth claims regarding the creature: the written testimony of the witnesses and images of the creature and its body parts. The latter can be sub-divided into detailed, hand-coloured engravings of preserved body parts and more schematic sketches of the whole animal. The claims of the protagonists were also bolstered in one case by an appeal to the writings of an earlier authority on the subject and in the other with reference to an all-encompassing system of nature, the so-called 'Great Chain of Being' or *scala naturae*.⁵

In the following sections I present the evidence for the nature of the Stronsay Beast. This consists of both the testimony given by witnesses who had seen the creature and the physical evidence, in the form of preserved body parts, that were circulated among natural historians. This physical evidence also circulated to a wider audience in the form of 'paper proxies': sketches and prints of the body of the creature and some of its preserved parts that were both privately circulated and published as engravings in journal articles. I then turn to the question of what this case can tell us about the shifting status of testimony and authority in post-Enlightenment natural history. But first, in the next section, I briefly examine the lives and careers of the two main protagonists in this story: John Barclay and Everard Home.

A TALE OF TWO ANATOMISTS

Barclay was the proprietor of the most successful of Edinburgh's extra-mural anatomy schools, which catered for the needs of the many medical students at the city's famous University who found that the teaching of anatomy there was inadequate. Barclay came from a relatively modest background. His father was a tenant farmer from Perthshire. He had been able to study at the University of St Andrews thanks to a bursary he had won in an open competition. His original intention was to become a minister of the Church of Scotland and he was licensed to preach in 1781. However, instead of following this path he became a tutor first to the sons of Charles Campbell of Loch Dochart and then from 1789 to the family of Sir James Campbell of Aberuchhill, where he developed his interests in anatomy and natural history. In 1792 he started attending anatomy classes at the University of Edinburgh and graduated with a medical degree in 1796. He was supported in this by Sir James Campbell, whose daughter he later married. After spending some months studying anatomy and surgery in London with Andrew Marshall he returned to Edinburgh to give his own courses on anatomy. After a slow start these proved to be very popular and in 1804 his classes were recognized by the Royal College of Surgeons

4 In the case of the sea serpent seen at Gloucester, Massachusetts, in 1817 it was claimed that a juvenile sea serpent had been found, although this was later found to have been a deformed snake, and another supposed captured sea serpent turned out to be a tuna; see Robert L. France, *Disentangled: ethnozoology and environmental explanation of the Gloucester sea serpent* (Wageningen Academic Publishers, Wageningen, 2019), pp. 71, 76–81, and Wayne Soini, *Gloucester's sea serpent* (History Press, Charleston, 2010), pp. 113–115.

5 For a classic account of the 'Great Chain of Being', see Arthur O. Lovejoy, *The Great Chain of Being* (Harvard University Press, Cambridge, MA, 1964).

of Edinburgh as meeting the requirements for candidates for their exams. By 1810 he had around 900 students.⁶ Barclay had been elected a Fellow of the Royal Society of Edinburgh in 1807.

Unlike Barclay, Everard Home was from a medical background. He was born in Hull and his father was a former military surgeon. After studying at Westminster School, Home turned down a scholarship to study at Trinity College, Cambridge, to follow his father's profession instead. After serving his apprenticeship with the famous John Hunter, who had married Home's sister, he spent some years as an army surgeon before returning to work as Hunter's assistant. On Hunter's death in 1793 Home inherited his flourishing and lucrative practice among Georgian London's high society. His status as surgeon to the aristocracy was cemented by his appointment as sergeant-surgeon to George III in 1808. He also lectured in anatomy and surgery at the Royal College of Surgeons. Home was one of the executors of Hunter's will and became the curator of the Hunterian Museum, set up to house Hunter's extensive collections. After Hunter's death, Home also took charge of his papers, apparently mining them for material for use in his own publications before burning most of them in 1823.⁷ (The loss of these papers was considered a serious enough issue that a parliamentary select committee was set up in 1834, two years after Home's death.) He became a Fellow of the Royal Society in 1787 and contributed more than 100 papers to the Society's *Transactions*, including a significant number on the anatomy of exotic and problematical creatures such as the platypus and the dugong.⁸ This made him by far the most prolific contributor to the *Transactions* of the period.⁹

There were many parallels in the careers of these two men: both were teachers of surgery and anatomy in a metropolitan setting, both had well established reputations as comparative anatomists, and both were plugged into extensive networks of patronage and had built their careers with the aid of strong personal and family connections. However, they came to radically opposed conclusions as to the nature of the Stronsay Beast, based on fundamentally different attitudes towards evidence and authority in natural history. Barclay was convinced that the body was that of the 'great sea snake', whereas Home swiftly identified the body as merely the decomposed remains of a basking shark, a species common in the seas around the British Isles. After presenting the evidence in more detail I will be exploring the factors that led them to come to such contradictory conclusions.

THE WITNESSES AND THEIR TESTIMONY

We are lucky enough to have the sworn testimony of four witnesses who saw the Beast in September and October 1808. Their evidence was given in November 1808 to the justices of the peace Dr Robert Groat, a physician from Kirkwall, and Malcolm Laing, the local Member of Parliament. Laing was also the brother of Gilbert Laing Meason, the landowner on whose land the Beast had been found. These statements were later printed as

6 M. H. Kaufman, 'John Barclay (1758–1826) extra-mural teacher of anatomy in Edinburgh: Honorary Fellow of the Royal College of Surgeons of Edinburgh', *Surgeon* 4, 93–100 (2006), at p. 95.

7 Duncan C. L. Fitzwilliams, 'The destruction of John Hunter's papers', *Proc. R. Soc. Med.* 42, 37–42 (1949).

8 N. G. Coley, 'Home, Everard, first baronet', *Oxford dictionary of national biography* (Oxford University Press, Oxford, 2004), <https://doi.org/10.1093/ref:odnb/13639> (accessed 12 July 2020).

9 Alex Csiszar, *The scientific journal: authorship and the politics of knowledge in the nineteenth century* (University of Chicago Press, Chicago, 2018), p. 127.

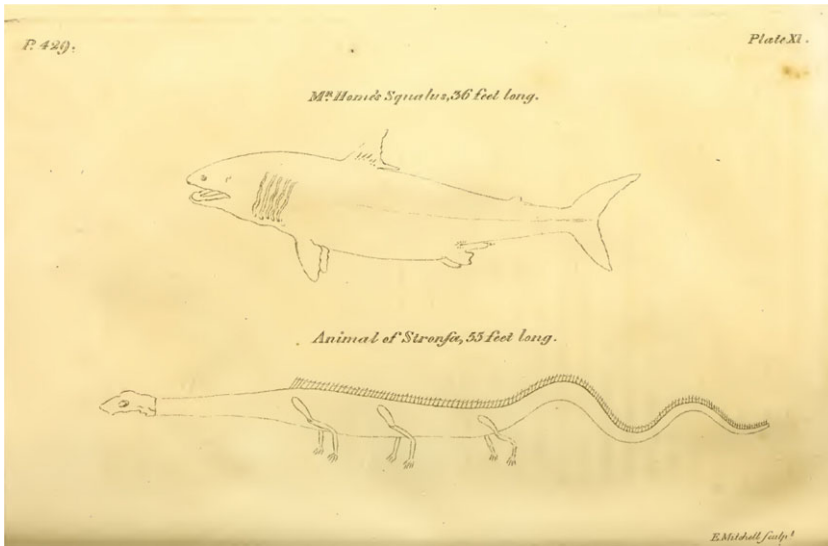


Figure 1. Sketches of the Stronsay Beast and a basking shark drawn to the same scale from John Barclay's *Mems Wernerian Nat. Hist. Soc.* 1, 418–44 (1811). (Source: Biodiversity Heritage Library, <https://www.biodiversitylibrary.org/item/165544#page/494/mode/1up>.) (Online version in colour.)

appendices to John Barclay's paper on the Beast. They are written in the third person by a clerk rather than being the *verbatim* testimony of the witnesses themselves. While this doubtless rendered the testimony tidier and more coherent, it puts it at one remove from the first-hand experience of the witnesses themselves. As well as accounts given by the four who saw the body on the Beach, Barclay included a letter from the Reverend Donald Maclean, who claimed to have seen the Beast alive some months before the discovery of its corpse, near the island of Eigg off the West coast of Scotland, and approximately 300 kilometres from Stronsay as the crow flies. I will deal with all these accounts in the order in which they were originally set down. This means that the Reverend Maclean's account of his run-in with the living creature in June of 1808 will be set last, as it was not written down until April 1809, seven months after the discovery of the Beast's body and ten months after his own encounter, when details of the Beast and its discovery had already circulated widely.

Three of the four witnesses questioned by the justices of the peace were shown a sketch of the Beast and asked to comment on its resemblance to the creature they had seen. This sketch was almost certainly very similar to the one reproduced in John Barclay's paper (see figure 1). One of the witnesses, George Sherar, who had first seen the Beast at close quarters towards the end of October, had described the creature to a certain Mr Petrie, who drew several sketches of the body, which at this point was rapidly disintegrating. All subsequent images of the whole animal seem to have been based on Petrie's sketches. It is not therefore surprising that all surviving images are more or less identical in their depiction of the creature. Sherar gave the following detailed account of the circumstances under which the sketches were made. A few days after Sherar had seen the Beast more or less intact, he testified that

a gale of wind came on, and drove it to another part of the shore, where it was broken to pieces by the surge, and when Mr Petrie came out to take a drawing of it, no part of the

body remained entire: That he endeavoured to convey an idea of the animal to Mr Petrie, by drawing the figure of it as accurately as he could, with chalk, on the table, exactly as it lay upon the shore, after which Mr Petrie made six or seven different sketches or plans of the fish, before he could bring it to correspond, in each minute particular, with the strong idea which he retains of its appearance: That he was the more attentive to its shape, dimensions and figure, in order to be able to give an accurate account of it to any travellers that might come to Rothiesholm[.]¹⁰

The first testimony to be recorded, on 10 November 1808, was that of Thomas Fotheringhame, a house carpenter from Kirkwall, the largest town in the Orkney Islands. He was one of those who saw the Beast after it was stranded at Rothiesholm Head. Fotheringhame testified that 'being in Stronsa during the gales of wind in October last, he went to see the strange fish that was driven ashore in Rothiesholm Bay'. He had brought a foot-rule with which he measured the length of the Beast as 'exactly fifty-five feet, from the junction of the head and neck, where there was the appearance of an ear, to the tail'.¹¹ On being shown Petrie's sketch of the Beast he declared

That the neck appeared to him to be too long: That the fins or arms, or, as they were called on the island, the wings of the animal, were jointed to the body nearer the ridge of the back than they appear in the drawing: That the toes were less spread out, and tapering more to a point, unless when purposely lifted up; but were not webbed unless for the space of an inch and a half in breadth, where they joined each other; and the length seemed to be about eight inches: That he measured one of the wings next the head, which was four feet and a half in length, and in shape, from the first joint to the extremity, it resembled a goose-wing without the feathers: That the hollow between the snout and the upper part of the skull, appeared to him not to be quite so deep as represented in the drawing: That in every other respect the drawing appears to be so exact, that if the fish had not been mentioned, it would have brought it to his recollection[.]¹²

The second witness who gave testimony to the justices of the peace on 19 November was John Peace, a tenant farmer from Dounatoun in Rothiesholm. Peace had found the body stranded on rocks while fishing some days before it was finally washed ashore. He was the first of the witnesses to see the dead creature. He testified that

on the 26th day of September last, he went a fishing off the east part of Rothiesholm-head, when he perceived, as he imagined, a dead whale, on some sunk rocks, about a quarter of a mile from the Head: That his attention was first directed to it by the sea-fowl screaming and flocking about it; and on approach of it, in his boat, he found the middle part of it above the surface of the water: That he then observed it to be different from a whale, particularly in having fins or arms, one of which he raised with his boat-hook above the surface of the water[.]¹³

About ten days later he saw the Beast again after it had been washed up at Rothiesholm Head. Like Fotheringhame, he too measured the creature, testifying that it was 'about

10 John Barclay, 'Remarks on some parts of the animal that was cast ashore on the Island of Stronsa, September 1808', *Mems Wernerian Nat. Hist. Soc.* 1, 418–444 (1811), at p. 438.

11 *Ibid.*, p. 431.

12 *Ibid.*, p. 432.

13 *Ibid.*, p. 434.

fifty-four or fifty-five feet in length' and that he had 'observed the six arms, or wings as they are called on the island'. He too was shown the sketch of the Beast and commented that:

the joint of the foremost leg was broader than represented in the drawing, being more rounded from the body to the toes, and narrower at the upper end than at its junction with the toes: That the limb itself was larger than the hinder ones, and the uppermost joint or shoulder was altogether attached to the body: That in all other respects the drawing appears to him to be an exact resemblance of the fish, as it lay on the beach[.]¹⁴

Peace's statement was the only one not to be signed, as he declared himself to be illiterate at the end of his deposition.

The third deposition was that of Sherar, a tacksman from Rothiesholm, given on the same day as Peace's testimony.¹⁵ He claimed to have first seen the Beast being examined by the crew of Peace's boat on 20 October, when he took it to be a dead whale (it seems likely that either Sherar or Peace was mistaken about the date, as according to Peace's testimony, the Beast had already washed up on the shore ten days after his initial sighting of it at sea on 26 September). Ten days later he went to see the creature after it had been washed into a bay, while the gale that had brought it there was still raging. When the gale had died down a day or two later he returned to find it washed up on the beach. He came back for a third time on the following day, bringing with him a foot-rule and, like Fotheringhame and Peace, he measured the creature and 'found it to be exactly fifty-five feet in length, from the hole in the top of the skull, (which he has brought to town with him), to the extremity of the tail.'¹⁶ He too was shown Petrie's sketch, which was based partly on his own description, and declared that 'he is ready to make oath, that the drawing is an exact resemblance of the fish, as it appeared when he measured it'. Shearer was questioned again by the justices of the peace later the same day, when he gave some further details relating the Beast's stomach and the absence of fins other than the six 'paws', all of which was in full agreement with the sketch and the testimony of the other witnesses.

The fourth witness was another tacksman, named William Folsetter, from Whitehall on Stronsay. No date is given for his deposition, but it seems likely that it was given on the same day as Peace's and Shearer's evidence. He testified that 'he did not see the body till about the 28th day of October, when it had gone to pieces: That he saw about nine or ten feet of the back-bone, and some bones of the paws, and what was supposed to be the stomach.'¹⁷ Having only seen the Beast in an advanced state of decomposition, his account is shorter and less detailed than that of the other witnesses on Stronsay. No mention is made of the sketch of the Beast shown to the other witnesses.

The fifth piece of testimony presented by Barclay is the letter sent to Patrick Neill by the Reverend Donald Maclean from the Isle of Eigg in the Hebrides on 24 April 1809 and discussed in a meeting of the Society on 13 May.¹⁸ Maclean's remarkable account of an earlier encounter with the living creature seemed to confirm spectacularly the evidence from Stronsay. Maclean wrote:

¹⁴ *Ibid.*, p. 435.

¹⁵ A tacksman in the early nineteenth-century Highlands was a landholder of intermediate social status who sublet land to poorer tenant farmers.

¹⁶ Barclay, *op. cit.* (note 9), p. 437.

¹⁷ *Ibid.*, p. 440.

¹⁸ 'Minutes of the Wernerian Natural History Society', 1808–1830, Coll-206/1/1, p. 29, Centre for Research Collections, University of Edinburgh, Edinburgh, UK.

According to my best recollection, I saw it in June 1808, not on the coast of Eigg, but on that of Coll. Rowing along that coast, I observed, at about the distance of half a mile, an object to windward, which gradually excited astonishment. At first view, it appeared like a small rock. Knowing there was no rock in that situation, I fixed my eyes on it close. Then I saw it elevated considerably above the level of the sea, and after a slow movement, distinctly perceived one of its eyes. Alarmed at the unusual appearance and magnitude of the animal, I steered so as to be at no great distance from the shore. When nearly in a line betwixt it and the shore, the monster directing its head (which still continued above water) towards us, plunged violently under water.¹⁹

Alarmed by the approach of the creature, Maclean and his companions made for the shore. It seems that after approaching within a few yards of the boat the animal could not pursue them any further into the shallows and it headed back out to sea. They were only able to see the head and neck clearly, as the rest of its body remained under the water. As he described, it, 'Its head was rather broad, of a form somewhat oval. Its neck somewhat smaller. Its shoulders, if I can so term them, considerably broader, and thence it tapered towards the tail, which last it kept pretty low in the water, so that a view of it could not be taken so distinctly as I wished.'²⁰ As far as it went, his description conformed well to the description of the creature from Stronsay. Maclean was clearly familiar with the descriptions given by the witnesses on Stronsay and made reference to characteristics of the Beast, such as the mane of filaments on its neck, which appeared in those accounts but which he did not see himself. He estimated that the creature was 70 to 80 feet long, rather greater than the length of the Beast as measured on Stronsay by three of the witnesses.

According to Maclean, his party were not the only people to see the animal that day. He gave the following account of a sighting of the Beast by the crews of some fishing boats, whom he claimed to have questioned regarding their experience:

About the time I saw it, it was seen about the island of Canna. The crews of thirteen fishing-boats, I am told, were so much terrified at its appearance, that they in a body fled from it to the nearest creek for safety. On the passage from Rum to Canna, the crew of one boat saw it coming towards them, with the wind, and its head high above water. One of the crew pronounced its head as large as a little boat, and each of its eyes as large as a plate. The men were much terrified, but the monster offered them no molestation.²¹

The testimony of the four witnesses from Stronsay (but not that of Maclean) also found its way into the hands of Everard Home in London. It had been sent in the first instance to Joseph Banks, the President of the Royal Society, by Groat and Laing. Banks, who was no comparative anatomist, had then passed it on to Home. Home's very different attitude towards the artisan and farmers who had seen the creature was to play an important role in his jarring difference of opinion with Barclay. Both Barclay and Home included in their publications more or less identical reconstructions of the appearance of the Beast based on the testimony of the witnesses and the earlier sketches derived from these. Alongside these reconstructions they both included images of basking sharks drawn to the same scale. Barclay's engravings are significantly more schematic than those of Home, who opted for

19 Barclay, *op. cit.* (note 9), pp. 442–443.

20 *Ibid.*, p. 443.

21 *Ibid.*, p. 444.

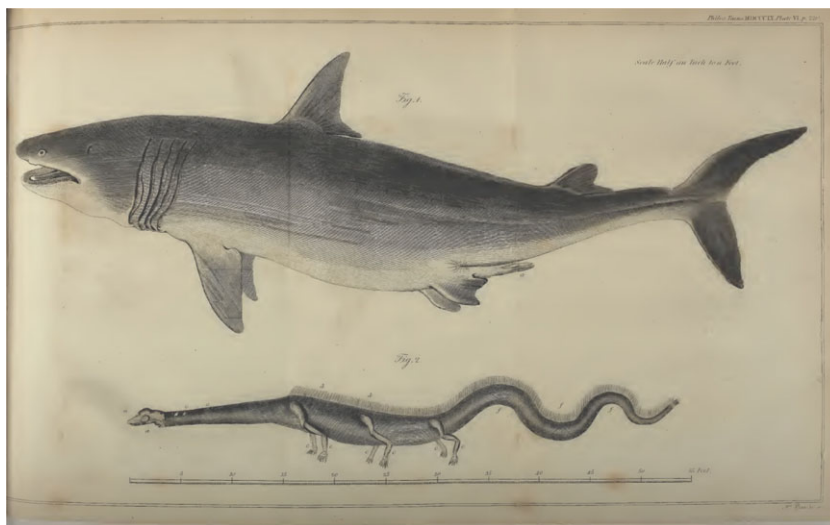


Figure 2. Sketches of the Stronsay Beast based on the testimonies of eye-witnesses and of a basking shark drawn to the same scale from Everard Home's article in *Phil. Trans. R. Soc. Lond.* **99**, 206–220 (1809). (Source: Biodiversity Heritage Library, <https://www.biodiversitylibrary.org/item/213357#page/277/mode/1up>.) (Online version in colour.)

a somewhat more naturalistic rendering of the two creatures, with their three-dimensional shape indicated by shading (see figure 2).

THE PHYSICAL EVIDENCE AND ITS REPRESENTATION

What makes the case of the Stronsay Beast stand out from most sea-serpent sightings is the physical evidence that was circulated among naturalists in the months that followed its discovery. Sketches of these preserved body parts were also made and these achieved an even wider circulation after being reproduced in Barclay's article. Four of the vertebrae of the creature were sent to the Wernerian Society in Edinburgh along with an account of its appearance by Mr Urquhart of Elsness, 'a gentleman who saw the animal, and a gentleman, too, of respectability and education, and well-known to our President and Secretary to be ardent in his pursuit of natural history'.²² This account was read to the Society by Patrick Neill on 19 November 1808.²³ Sadly Urquhart's account does not survive, although it seems to have confirmed the testimony of the other witnesses. Neill passed the vertebrae on to Barclay to examine.²⁴ The vertebrae were therefore the only body parts that Barclay had direct access to during his initial investigation. However, he also had detailed sketches made of other body parts at his disposal. Urquhart had sent drawings of one of the creature's limbs and of its head by P. Syme. Both of these had

²² *Ibid.*, p. 420.

²³ Minutes of the Wernerian Society, *op. cit.* (note 17), p. 24.

²⁴ Some of these vertebrae are still in the collections of National Museums Scotland. See K. P. Bland and G. N. Swinney, 'Basking shark: Genera *Halsydus* Neill and *Scapasaurus* Marwick as synonyms for *Cetorhinus* Blainville', *J. Nat. Hist.* **12**, 133–135 (1978). The other specimens sadly appear to have been lost.

been preserved by desiccation and appear to have been in rather a poor state when drawn. It seems that the limb itself was also later sent to the Society for examination. Hand-coloured engravings by Edward Mitchell (1773–1852) based on these drawings, plus others of the vertebrae, also based on drawings by P. Syme, were later published in Barclay's paper. Everard Home in London was also sent a collection of specimens by Laing. These consisted of 'that part of the skull, which contained the brain, the upper jaw having been separated from it, a considerable number of the vertebrae of the back united together by their natural attachments, a portion of one of the pectoral fins, with the cartilages that unite it to the spine, and a long and short cartilage forming the support of one of the gills'.²⁵

Both Barclay and Home used sketches of the entire animal in their effort to persuade their readers of their conflicting truth claims regarding the Beast. Illustration was central to the practice of natural history in the eighteenth and nineteenth centuries. As Daniela Bleichmar has remarked, 'the naturalist was defined first and foremost as an observer' and images were the most direct and compelling way to communicate those observations to others.²⁶ Images could play an essential role in recruiting readers as 'virtual witnesses'. This was particularly important when the objects depicted were of a strange and unfamiliar kind. In such a case, 'a full depiction of the peculiarities of the observed phenomena made illustrations a powerful device in the authentication of extraordinary phenomena of nature.'²⁷ Images present their objects directly to the visual sense of the reader rather than relying on the imagination to conjure it up before the mind's eye. They have always played a crucial role in providing compelling evidence to support truth claims by natural historians.

Normally, such natural historical illustrations would aim to portray the living thing and its distinguishing features in a manner that was as 'true to nature' as possible; but in the case of the Stronsay Beast only battered, disarticulated and desiccated fragments of the creature were available as the basis for illustrations. Any attempt to depict the whole animal had therefore to be based largely on the testimony of the witnesses. Barclay and Home both included reconstructions of the entire animal based on this testimony. Although Home's sketch of the bizarre creature would seem to work against his argument that it was simply the body of a decomposing basking shark, he included detailed notes in his 'explanation of the plates' to explain how one could be transformed into the other; for example, he labelled the apparent 'neck' of the Beast as 'The spine of the fish surrounded by muscles, the gills and gullet having been separated by putrefaction.'²⁸ This careful point-by-point deconstruction of the strange and outlandish features of the Beast shown in the illustration and the revelation of the disguised features of a basking shark, masked by the results of its decomposition, was designed to effectively demolish Barclay's interpretation of it as a specimen of the great sea serpent. Both authors used the scale of their illustrations to favour their own interpretations. Home clearly showed the Beast as of approximately the same length as the basking shark depicted alongside it, while Barclay, following the measurements made by the witnesses, showed it as significantly longer. While Barclay showed the length of the creature as it was

25 Everard Home, 'An anatomical account of the *Squalus maximus* (of Linnaeus), which in the structure of its stomach forms an intermediate link in the gradation of animals between the whale tribe and cartilaginous fishes', *Phil. Trans. R. Soc. Lond.* **99**, 206–220 (1809), on p. 214.

26 Daniela Bleichmar, 'Training the naturalist's eye in the eighteenth century: perfect global visions and local blind spots', in *Skilled visions: between apprenticeship and standards* (ed. Christina Grassendi), p. 168 (Berghahn, New York, 2007).

27 Palmira Fontes da Costa, 'The making of extraordinary facts: authentication of singularities of nature at the Royal Society of London in the first half of the eighteenth century', *Stud. Hist. Phil. Sci.* **33**, 265–288 (2002), at p. 275.

28 Home, *op. cit.* (note 24), p. 218.



Figure 3. The dried head (labelled Fig. 1) and sternum, scapulae and 'paws' (labelled Fig. 2) of the Stronsay Beast, from an engraving in John Barclay's article in *Mems Wernerian Nat. Hist. Soc.* 1, 418–44 (1811). (Source: Biodiversity Heritage Library, <https://www.biodiversitylibrary.org/item/165544#page/479/mode/1up>.) (Online version in colour.)

measured by the witnesses on the beach, Home showed it as only being as long as *he knew it must have been* in order to agree with his belief that it was a basking shark.

Only Barclay chose to include engravings in his paper of the preserved body parts of the Beast (see figures 3 and 4). Although Home included three plates depicting the digestive system of the basking shark based on an indisputable example caught at Hastings that he discussed in the same paper, he did not include any images of the specimens taken from the Stronsay Beast. For Barclay these images formed an important part of his case for the Beast not being a shark. Such epistemic images were 'made with the intent not only of

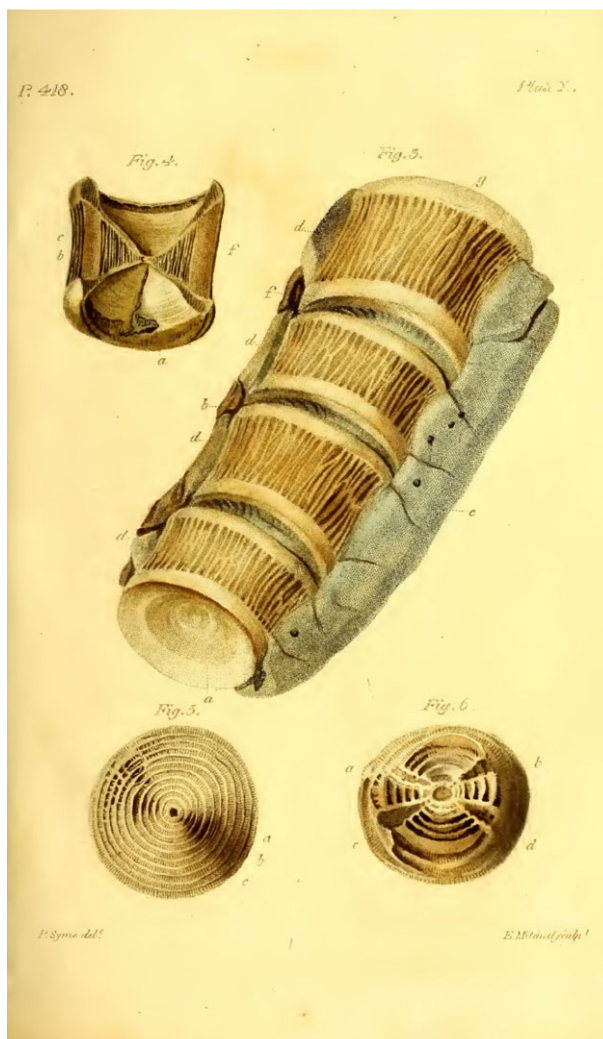


Figure 4. Vertebrae of the Stronsay Beast, from an engraving in John Barclay's article in *Mems Wernerian Nat. Hist. Soc.* 1, 418–44 (1811). (Source: Biodiversity Heritage Library, <https://www.biodiversitylibrary.org/item/165544#page/481/mode/1up>.) (Online version in colour.)

depicting the object of scientific inquiry but also of replacing it'.²⁹ They served the purpose of paper proxies for the specimens themselves, turning the readers of his article into virtual witnesses of their uniqueness. Readers could examine the images and decide for themselves whether they represented any known creature. For Home, by contrast, it was

²⁹ Lorraine Daston, 'Epistemic images', in *Vision and its instruments: art, science, and technology in early modern Europe* (ed. Alina Payne), pp. 13–35 (Pennsylvania State University Press, University Park, 2015).

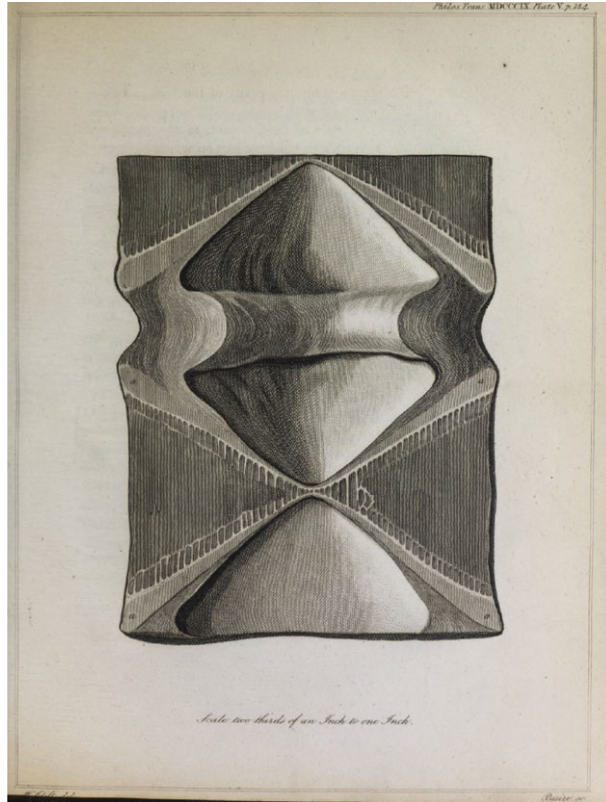


Figure 5. A longitudinal section of one of the intervertebral joints of the *Squalus maximus* reproduced from Everard Home's article in *Phil. Trans. R. Soc. Lond.*, **99**, 206–220 (1809). (Source: Biodiversity Heritage Library, <https://www.biodiversitylibrary.org/item/213357#page/209/mode/1up>.) (Online version in colour.)

not necessary, or even desirable, to appeal to the audience's own judgement; instead, the reader was invited to accept Home's expert opinion on trust.

Barclay's engravings followed the conventions for paper proxies used in mineralogy in the same period, as described by Martin Rudwick: 'proxies were depicted with the visual conventions of still-life painting in *tromp de l'oeil* style, effectively creating the illusion that one was viewing the three-dimensional specimen itself rather than an image on paper.'³⁰ The verisimilitude of these drawings was important to Barclay. Referring to the original drawings exhibited to the Wernerian Society on which the engravings by Mitchell were based, he wrote: 'These rings, and the sulci [of the vertebrae], are admirably represented in Mr Syme's drawing, which exhibits also a striking likeness of the cartilaginous ridges.'³¹ Readers were invited to observe for themselves the features of the vertebrae that did not accord with those of a basking shark. Barclay here referred readers

³⁰ Martin Rudwick, *Bursting the limits of time: the reconstruction of geohistory in the Age of Revolution* (University of Chicago Press, Chicago, 2005), p. 76. For an excellent recent review of the literature on epistemic images, see Alexander Marr, 'Knowing images', *Renaiss. Q.* **69**, 1000–1013 (2016).

³¹ Barclay, *op. cit.* (note 9), p. 423.

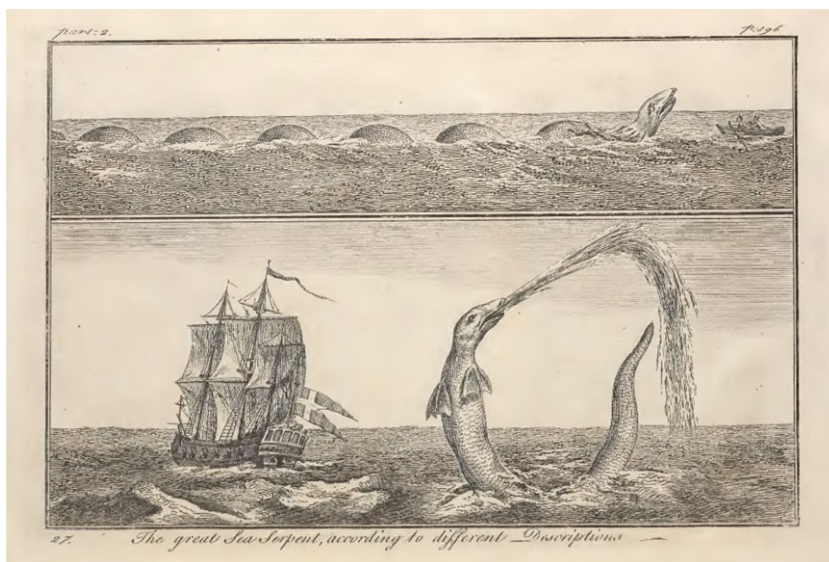


Figure 6. Engravings of the great sea serpent from *The natural history of Norway* (A. Linde, London, 1755) by Erich Pontoppidan. (Source: Biodiversity Heritage Library, <https://www.biodiversitylibrary.org/item/131599#page/497/mode/1up>.) (Online version in colour.)

to the illustrations of the vertebrae of a basking shark that appeared in a previous paper by Home (see figure 5).³² He claimed that this ‘must have been very carelessly and inaccurately executed, if the vertebrae which he has described, and the vertebrae which you have seen, and may still see in the presses before you, belonged to the same species of animal.’³³

A NEW SPECIES OF ANIMAL OR ‘A NEW AND REMARKABLE VARIETY OF THE HUMAN SPECIES’?

Neill and Barclay were firmly of the opinion that the creature did not belong to any species that had previously been scientifically named and described. Barclay declared that the animal had many unique features and in particular that the caudal vertebrae of the animal ‘exhibit in their structure some beautiful provisions of Nature, not hitherto observed in the vertebrae of any other animal’.³⁴ Neill announced before the Wernerian Society that the Beast was a creature new to science and named it *Halsydrus pontoppidani*. They further believed that it was the same animal as the great sea serpent described and illustrated in *The natural history of Norway* by the Norwegian Lutheran bishop and natural historian Erik Pontoppidan (1698–1764), first published in 1755 (see figure 6). Neill’s name for the new species was chosen to honour Pontoppidan as the first to give a detailed account of the animal. Pontoppidan himself was thoroughly convinced of the existence of the great sea

³² Everard Home, ‘On the nature of the intervertebral substance in fish and quadrupeds’, *Phil. Trans. R. Soc. Lond.* **99**, 177–187 (1809), at p. 184.

³³ Minutes of the Wernerian Society, *op. cit.* (note 17), p. 26.

³⁴ Anon., ‘Proceedings of learned societies: Wernerian Natural History Society’, *Phil. Mag.* **33**, 90–91 (1809), at p. 90.

snake by the 'full and sufficient evidence from credible and experienced fishermen, and sailors, in Norway; of whom there are hundreds, who can testify that they have annually seen them', although he acknowledged that there were 'enemies to credulity' who were less inclined to believe.³⁵ In his book he supported his argument for the reality of the creature with numerous accounts of recent sightings, illustrated with some impressive drawings of the encounters and signed testimonies of the witnesses, of very much the same kind as those procured by the Orkney justices of the peace half a century later.

Despite the testimony of numerous eye-witnesses apparently confirming the Beast to be an unknown animal, Home was unconvinced by Barclay and Neill's interpretation. Home confidently identified the Stronsay Beast as a basking shark, a species common off the coast of Scotland, in 'a half-putrid state'. He based his opinion largely on several pieces of the creature he had personally examined: the skull, the upper jaw, some vertebrae, one 'pectoral fin' and a gill support. Home compared these with other specimens taken from basking sharks and concluded that they were one and the same animal.

The inconsistencies between the accounts of the witnesses and the appearance of the shark were put down to the poor condition of the body and the lively imaginations of the local people who described it: 'in some things, those who saw the fish adhered to truth, and in others allowed their imaginations to supply deficiencies'.³⁶ He concluded, for example, that four of the six legs reported by the witnesses were simply products of their imaginations, while the other two were the claspers that belong to all male sharks. (According to Home, they could not have been fins, the structure of which did not fit the descriptions given.) He also flatly denied that the witnesses had seen what they claimed to have seen with regard to key features of the animal. In the explanation that accompanied his version of the sketch presented in his paper, he further suggested that their testimony had been contaminated by their exposure to Pontoppidan's famous account of the great sea serpent, leading them to think they had seen things that in reality they had only read about, such as the

Contortions which the structure of the intervertebral substance of the fish rendered it impossible for the spine to make, and therefore could not have been seen. These contortions so represented, render it highly probable that the account of Pontoppidan's sea snake had been read by the spectators of this fish, in the interval of time between their seeing it and their depositions being taken.³⁷

Home also questioned the accounts of the size of the creature, which he considered, based on the parts he had examined, could not have been more than thirty feet long. He concluded that otherwise the drawings of the Beast were largely consistent with the appearance of a basking shark in an advanced state of decomposition.

Barclay disputed Home's interpretation of the vertebrae of the creature as being identical to those of the basking shark. He considered their morphology to be unique and quite unlike the shark described by Home.³⁸ He questioned the compatibility of the form of the creature described by the witnesses with the body of a shark even in an advanced state of decomposition. In particular, he argued that the head of the creature was far too small to be that of a shark. He also pointed out the disparity in the length of the creature with the

35 Erich Pontoppidan, *The natural history of Norway*, 2 vols (A. Linde, London, 1755), vol. 2, p. 196.

36 Home, *op. cit.* (note 24), p. 215.

37 *Ibid.*, pp. 218–219.

38 Barclay, *op. cit.* (note 9), p. 423.

size of the specimen of the basking shark described by Home. Although Barclay questioned Home's interpretation of the parts of the creature he had examined, the crucial factor for him was the testimony of the witnesses. He could not believe that credible witnesses could have been mistaken about what they had seen with their own eyes, and what they had seen was certainly not, in Barclay's opinion, a basking shark. Home's refusal to credit the sworn testimony of reliable witnesses was incomprehensible to Barclay, who in exasperation quipped that 'If these odd effects on the minds of the Orcadians, could have proceeded from nothing else than the sight of a *Squalus* or a *Squalus maximus*, Mr Home is certainly entitled to the credit of having discovered, if not a new species of fish, at least a new and remarkable variety of the human species, inhabiting the Orkneys.'³⁹

TESTIMONY AND AUTHORITY IN EARLY NINETEENTH-CENTURY NATURAL HISTORY

The truth claims regarding the identity of the Stronsay Beast made by Barclay and Home were based on four types of authority: first, the authority of the eye-witness testimonies given by those who saw the Beast at first hand; second, the authority of an earlier respected natural historian, whose accounts of similar creatures could be used to bolster the witnesses' testimony; third, the authority of an established and all-encompassing system of nature; and fourth, the authority of the expert natural historian himself. In this section I will deal with each of these in turn.

The status of testimony in eighteenth- and early nineteenth-century natural history is crucial to understanding the debate between Barclay and Home over the Stronsay Beast. The argument between the two anatomists hinged on whose testimony was to be considered authoritative. Could the word of the Orkney artisan and farmers that they had seen a genuinely unknown creature provide grounds for moral certainty regarding the status of the Beast as a species new to science? Could the word of a minister of the Church of Scotland who made the extraordinary claim to have seen the creature alive be trusted? Or could such evidence simply be disregarded if it clashed with the observations and inductions of an expert comparative anatomist?

Clearly not everyone's testimony as to the matters of fact they claimed to have witnessed was to be trusted equally. How were natural historians such as Barclay and Home to know whose word to trust? As Steven Shapin has pointed out, '[k]nowledge of who speaks is pervasively pertinent to decisions about whether what is spoken may be relied upon, and acted upon as true'.⁴⁰ Shapin's picture of an exclusive sphere of 'gentlemen of science' exchanging accounts of observations and experiments has been questioned by some historians even for the early modern period. Barbara Shapiro has argued that scholars such as Shapin tend to 'overemphasize the role of aristocratic and gentlemanly norms' in their models of scientific knowledge creation.⁴¹ Palmira Fontes da Costa has also argued that at the early eighteenth-century Royal Society, the content of the report and the competence of

³⁹ *Ibid.*, pp. 428–429.

⁴⁰ Steven Shapin, *A social history of truth: civility and science in seventeenth-century England* (University of Chicago Press, Chicago, 1994), p. 126.

⁴¹ Barbara Shapiro, 'Testimony in seventeenth-century English natural philosophy: legal origins and early development', *Stud. Hist. Phil. Sci. A* 33, 243–263 (2002), at p. 244.

the witness rather were more important than social status.⁴² In the case of the Stronsay Beast in the first decade of the nineteenth century, we have an example of two contrasting attitudes towards testimony. Barclay was prepared to take the testimony of relatively low-status witnesses—at least one of whom, John Peace, was illiterate—at more or less face value. Home, on the other hand, was vastly more circumspect in his treatment of such testimony and was not even prepared to trust the judgement of Barclay, whose credentials as a comparative anatomist rivalled his own.

Home gave credit exclusively to Gilbert Laing Meason, the landowner, and his brother Malcolm Laing (1762–1818), the lawyer and local Member of Parliament, while neglecting even to mention the names of the lower-status witnesses. Even Laing Meason and Laing were only treated as sources of raw data; their own opinions of the nature of the Beast are not even mentioned. Home wrote that 'we are indebted to the zeal and liberality of Mr. Meason and Mr. Laing, who have collected a sufficient body of evidence to enable me to determine that point, and prove it to be a *Squalus*'.⁴³ Home was recruiting these relatively high-status individuals to corroborate his opinion, even if they almost certainly would not have agreed with his interpretation of the Beast. In contrast, he disregarded the lower-status farmers and fishermen who saw the Beast at first hand and whose names he neglected to mention. Even the two gentlemen are only thanked for collecting the evidence from which Home, the expert natural historian, could determine the true nature of the Beast. Home's expertise in this case rested on the meticulous observations he had made of a more intact basking shark landed at Hastings in November 1808, experience that had also allowed him to correctly identify a third shark found at Penrhyn in Cornwall in January 1809 from a drawing sent to him by a witness.⁴⁴ According to da Costa, in the middle of the eighteenth century the Royal Society, of which Home was a prominent member, had begun to take 'an increasingly sceptical attitude towards observations of extraordinary phenomena and that intrinsic plausibility finally emerged as a strong counterweight to testimony'. It was at this time that 'the rules of civility and social authority definitively gave way to competence and professional authority in the authentication of knowledge at the Society'.⁴⁵ Home's attitude to the evidence regarding the Stronsay Beast accords well with such a shift towards the privileging of expert opinion and disdain for non-expert testimony.

It should, however, be noted at this point that another factor, aside from his low opinion of the judgement and observational skills of the Stronsay witnesses, may have conditioned Home's attitude towards their testimony, and that is confirmation bias. He may simply have neglected to take evidence into account that did not confirm his own fixed opinion regarding the true nature of the Beast. It is worth asking whether Home would have been so ready to discount the witnesses' testimony if they had suggested that the Beast was in fact a shark. It would certainly have been convenient for Home that his attitude to the witnesses' testimony allowed him to ignore evidence that did not accord with his own opinion.

Barclay, in contrast with Home, named and published the testimonies of the carpenter, tenant farmer and two tacksman. For Barclay, despite the lack of zoological expertise of the witnesses and the minor disparities between their accounts, their testimony was reliable

42 Fontes da Costa, *op. cit.* (note 26), p. 267.

43 Home, *op. cit.* (note 24), p. 217.

44 *Ibid.*, p. 213.

45 Fontes da Costa, *op. cit.* (note 26), p. 285.

and consistent enough to confirm that the creature could not have been a basking shark as Home claimed.

The solemn declarations in these affidavits, it must be confessed, do not always agree, even where they relate to the same things; and part of this difference may have arisen, from the persons who emitted the declarations not being accustomed to the accuracy required in zoological descriptions,—from their having seen the animal separately, at different periods, in different states, and in different positions. Be these declarations, however, true or false, there is nothing in them which, when taken literally, indicates a *Squalus* or a *Squalus maximus*.⁴⁶

In the account of the meeting of the Wernerian Society that later appeared in the *Philosophical Magazine*, the account of the Beast is described as having been ‘collected from different sources, especially letters of undoubted authority, which he had received from the Orkneys.’⁴⁷ Clearly Barclay and Neill had little doubt about the trustworthiness of their Orcadian witnesses when they claimed to have seen a specimen of the creature commonly known as the ‘great sea snake’.

In her study of sea-serpent sightings later in the nineteenth century, Sherrie Lynne Lyons has noted that ‘the language of the sea-serpent literature was usually that of the courts. Judicial procedures including eyewitness accounts, testimonies, and written reports in the form of affidavits and depositions were all means of establishing the legitimacy of the serpent sightings.’⁴⁸ Since the sixteenth century the giving of testimony by witnesses had become a fundamental part of the legal process across Europe, and this provided a model for the gathering and presentation of evidence in natural philosophy from at least the seventeenth century.⁴⁹ Barbara Shapiro especially has done much to elucidate the way in which ‘many of the assumptions and much of the technology of fact-finding in law were carried over’ into science.⁵⁰ In natural history as in law, through the testimony of reliable witnesses it was possible to obtain ‘moral certainty’ regarding matters of fact. It is therefore not surprising that much of the evidence-gathering in the case of the Stronsay Beast adhered closely to this juridical framework for scientific investigation.

Barclay was also heir to a long Scottish empirical tradition that placed a high value on the role of testimony in knowledge creation. Much of the teaching at Edinburgh when Barclay was a student was steeped in the Common Sense philosophy of Thomas Reid. According to Reid ‘[t]he wise and beneficent Author of nature’ has given human beings

a propensity to speak truth, and to use the signs of language, so as to convey our real sentiments. This principle has a powerful operation, even in the greatest liars; for where they lie once, they speak truth a hundred times. Truth is always uppermost, and is the natural issue of the mind.⁵¹

Reid saw ‘testimony as part of the foundations’ of knowledge.⁵² Even Reid’s contemporary and arch rival, David Hume, placed a high value on testimony, writing that ‘there is no species

46 Barclay, *op. cit.* (note 9), p. 428.

47 Anon., *op. cit.* (note 33), p. 90.

48 Lyons, *op. cit.* (note 3), p. 30. It is therefore unsurprising that investigations of similar sea-serpent cases in the same period also followed the same legal framework: see, for example, France, *op. cit.* (note 4), p. 74.

49 R. W. Serjeantson, ‘Testimony and proof in early-modern England’, *Stud. Hist. Phil. Sci. A* **30**, 195–236 (1999), at p. 195.

50 Barbara Shapiro, ‘The concept of “fact”: legal origins and cultural diffusion’, *Albion* **26**, 227–252 (1994), at p. 227.

51 Thomas Reid, *Inquiry into the human mind, on the principles of common sense* (A. Millar, Edinburgh, 1765), p. 335.

52 C. A. J. Coady, *Testimony: a philosophical study* (Oxford University Press, Oxford, 1992), p. 23.

of reasoning more common, more useful, and even necessary to human life, than that which is derived from the testimony of men and the reports of eye-witnesses and spectators'.⁵³ Reid's student and disciple Dugald Stewart, the professor of moral philosophy at Edinburgh from 1785 to 1820, also largely shared his regard for the epistemological value of testimony. In his influential *Elements of the philosophy of the human mind*, Stewart included a section entitled 'Evidence of Testimony tacitly recognised as a Ground of Belief in our most certain Conclusions concerning Contingent Truths'.⁵⁴ It is very likely that during his student years Barclay attended Stewart's lectures, or was at least acquainted with and influenced by these opinions, which formed part of the common sense of educated men in the place and time in which he lived.

Biographical factors may also have played a role in conditioning the very different responses of Barclay and Home to the testimony of the witnesses. As a Perthshire farmer's son, Barclay was clearly more inclined to credit the word of the Orkney farmers who had seen the Beast than was Home. They were a 'variety of the human species' that would have been very familiar to him. To Home, the Orkneys might well have seemed a remote and semi-barbaric place, whose native inhabitants were not necessarily to be trusted. The very different cultural contexts of Barclay's Edinburgh and Home's London must also have played a part. The post-Reformation Scottish educational system, which gave gifted boys like Barclay from modest backgrounds access to professional careers, or even sometimes professorial chairs, gave rise to the much-debated phenomenon of the 'democratic intellect'.⁵⁵ By contrast, the two English universities that existed in the period were largely bastions of the aristocracy and, as R. D. Anderson has noted, '[f]ew countries have had universities as confined to the elite as England in 1800'.⁵⁶ The more open and democratic intellectual culture of Edinburgh might help to explain the ready acceptance of the testimony of non-expert witnesses of lower social status on the part of the city's intellectual elite.

By contrast, Home's approach to the evidence devalues the testimony of people in favour of the testimony of things and the absolute and exclusive authority of the man of science to correctly interpret them.⁵⁷ In the words of Graham Burnett, what was at stake here was not just the taxonomic position of the Beast, but 'human taxonomy'.⁵⁸ Barclay's witnesses were rational men capable of accurately observing and correctly interpreting the phenomena of the natural world, whereas to Home they were flawed and fallible creatures who lived in a world that was often incomprehensible to them and could be rightly interpreted only by the man of science. For Home, only the mute testimony of the specimens before his own eyes could be trusted. The language of nature had to be read directly from nature's own artefacts and could be deciphered correctly only by the expert.

⁵³ David Hume, *An enquiry concerning human understanding* (Oxford University Press, Oxford, 1999; first published 1748), p. 170.

⁵⁴ Dugald Stewart, *Elements of the philosophy of the human mind*, 2nd edn, 2 vols (Constable, Edinburgh, 1814), vol. 2, pp. 251–256.

⁵⁵ George Davie, *The democratic intellect: Scotland and her universities in the nineteenth century* (Edinburgh University Press, Edinburgh, 2013).

⁵⁶ R. D. Anderson, *Universities and elites since 1800* (Cambridge University Press, Cambridge, UK, 1995), p. 4.

⁵⁷ It is noteworthy that Richard Owen, writing later in the century, was similarly scornful of eye-witness accounts of sea serpents and vigorously defended the superior authority of expert opinion. See Brian Regal, 'Richard Owen and the sea-serpent', *Endeavour* 36, 65–68 (2012).

⁵⁸ Burnett, *op. cit.* (note 2), p. 195.

The tendency in English science to judge that ‘the testimony of the scientist was more credible than that of ordinary persons’ has been noted by Shapiro in the context of the Royal Society and is very evident from Home’s account.⁵⁹

Home was working within a methodological framework that privileged the authority and expertise of the man of science to produce true knowledge of the natural world and discounted the testimony of non-expert witnesses. In doing so he largely abandoned the approach to fact-finding based on legal procedure that had dominated natural history since the seventeenth century and which underpinned Barclay’s account of the creature. For Home the testimony of the islanders was not a reliable source of knowledge. Their testimony had to be carefully winnowed and interpreted by the expert. The true nature of the animal was to be determined by the man of science alone. Details that did not fit with his interpretation, even when corroborated by multiple witnesses, could be freely rejected as products of the their imaginations. In accordance with this attitude, Home chose to discount three features of the creature’s anatomy that were unequivocally present in the witnesses’ testimony: first, the creature was reported to have had six limbs, a detail confirmed by the statements of those who had seen the dead creature that were appended to Barclay’s paper; second, in the sketch confirmed to be accurate by the witnesses the spine was reported to be contorted in a way that Home considered impossible; and third, the Beast was reported to be significantly longer than he allowed to be plausible, although the length of the Beast had been confirmed in signed statements by Fotheringhame, Sherar and Peace, who had all separately measured it as 55 feet long.

In his paper to the Wernerian Society Patrick Neill referred to both Pontoppidan and Hans Egede (1686–1758) as authorities on the great sea snake. Egede, a Dano-Norwegian Lutheran missionary to Greenland, had written an account in his diary of an encounter with the creature he had had on a voyage in 1734. Egede’s account was quoted in Pontoppidan’s *The natural history of Norway*, which is probably the source from which Neill and Barclay knew it.⁶⁰ Pontoppidan did not claim to have seen the great sea snake himself, but he gave a compelling account of it, backed up with much testimony from witnesses. Both Pontoppidan and Egede were Lutheran clerics, which must have given their testimony and opinions added weight. Barclay does not lean too heavily on Pontoppidan in his published paper in the *Memoirs of the Wernerian Society*, only mentioning him once, and then only to name to the creature ‘Pontopiddan’s Snake’.⁶¹ Neill, however, in the paper he gave to the Society explicitly says that the creature corresponded ‘to the descriptions given by Egede and Pontoppidan of the Great Sea Snake of the Northern Ocean’, confirming his belief that it was the same animal.⁶² His decision to name the creature ‘Halsydrus Pontoppidani’ in honour of the Lutheran bishop reinforces the importance of this source for Neill.⁶³ That Barclay does not make more of this correspondence in his published article may be simply because he wished to foreground the evidence of actual specimens from the creature and the recent witness testimony rather than grounding his opinion on the authority of a book that was written more than fifty years before. It would make sense

59 Barbara Shapiro, ‘Testimony in seventeenth-century English natural philosophy: legal origins and early development’, *Stud. Hist. Phil. Sci. A* 33, 243–263 (2002), p. 258.

60 Pontoppidan, *op. cit.* (note 34), p. 199.

61 Barclay, *op. cit.* (note 9), p. 429.

62 Minutes of the Wernerian Society, *op. cit.* (note 17), p. 24.

63 *Ibid.*, p. 26.

that he wished to take on Home on this ground rather than falling back on older authorities, as it was on the basis of the recent evidence that Home had contested Barclay's interpretation. Home had also suggested that Pontoppidan's book may have influenced the accounts given by the witnesses, falsifying their recollections and rendering their testimonies invalid. For this reason too, Barclay may have wished to avoid leaning too heavily on the authority of Pontoppidan.

Although Home's treatment of the witnesses' statements may have foreshadowed increasingly dismissive attitudes to the testimony of non-expert witnesses in nineteenth-century science, when it came to locating the Beast within the order of nature, it was Home's approach that harked back to earlier eighteenth-century understandings of the natural world. In the full title of his paper he referred to the basking shark as 'an intermediate link in the gradation of animals between the whale tribe and cartilaginous fishes', a claim he repeated on two other occasions, while constantly making comparisons between the anatomy of the whale and that of the shark throughout the article. Home was operating within the framework of the *scala naturae*, which had structured understandings of the natural world for most of the previous century. This suggested that all things, from inanimate matter to God himself, could be arranged in a continuous scale, passing through all living and non-living beings. All species, whether well-known or newly discovered, had to be fitted into this scheme. As the Scottish natural historian William Smellie (1740–95) put it in his *Philosophy of Natural History* (1790): 'There is a graduated scale or chain of existence, not a link of which, however seemingly insignificant, could be broken without affecting the whole.'⁶⁴ Systems such as the *scala naturae* were not only 'a means of consolidating the intellectual domination of science over nature' but also 'represented the superiority of institutionalized, cosmopolitan learning to mere provincial and local lore'.⁶⁵ By the time Home was writing, however, the *scala naturae* was becoming widely dismissed by natural historians. By around 1816 Robert Jameson, the professor of natural history at the University of Edinburgh, for example, was telling his students that '[t]here is in truth no such regular gradation; and there are wanting many links to connect the whole. It is obvious to all, that if once the chain be broken, this amusing system is overthrown.'⁶⁶ The framework into which Home was attempting to fit the Beast was in fact rapidly crumbling.

Whereas Barclay notes 'the presence of a neck', a feature 'peculiar to cetaceous fishes', and the 'spiracula or air-holes' of the Beast suggesting an affinity with whales, he nowhere suggests or indeed even remarks on Home's belief, that the creature—in Home's opinion merely a large basking shark—was an intermediate form between cartilaginous fishes and whales.⁶⁷ He generally refers to it as a 'sea snake', but there is no suggestion that he thought it allied in any way to other snakes; he was probably simply following Pontoppidan in referring to it in this way. Instead, Barclay laments Home's unwillingness to accept the evidence that this was indeed a new species that could not fit neatly into the known natural order: 'Of what importance it is to science to admit no new genera or

⁶⁴ William Smellie, *The philosophy of natural history* (The heirs of Charles Elliot, Edinburgh, 1790), p. 520.

⁶⁵ Harriet Ritvo, *The platypus and the mermaid and other figments of the classifying imagination* (Harvard University Press, Cambridge, MA, 1998), pp. 18–19.

⁶⁶ Anon., 'Student's notes of Jameson's lectures on natural history delivered in Edinburgh University', 1816–1817, Dc.10.32, f. 1, Edinburgh University Library, Edinburgh, UK.

⁶⁷ Barclay, *op. cit.* (note 9), p. 425.

species into our catalogues of natural history, I cannot conceive.’⁶⁸ Instead of imagining the system of nature as being already mapped out and conforming to some ideal system, he called for the man of science to be open to unprecedented new discoveries; neither ‘prone to indulge a passion for the marvellous, nor apt to be infected with the silly conceit, that their knowledge of nature is already so complete, that little of importance remains to be discovered’.⁶⁹

Home had suggested that the witnesses believed they had discovered a ‘sea monster’, immediately creating the impression that they saw the animal as an exception to the natural order.⁷⁰ For Barclay and Neill the creature was not a ‘monster’ in the sense of the word used by their contemporaries, who saw such creatures as deviations from ‘normal nature’.⁷¹ Rather it was simply a poorly attested species of large sea creature that had often been seen but had yet to be scientifically described, but did not represent a deviation from the regular laws of nature. Barclay therefore never refers to the creature as a monster. It is only so described in his paper by the testimony of the Reverend Maclean. When Home claimed, *contra* Barclay, that the creature was ‘not a new animal unlike any of the ordinary productions of nature’, he was in fact misrepresenting Barclay’s opinion, even if some of the Orcadian witnesses might have believed that this was the case.⁷² As Graham Burnett correctly points out, a monster in the context of the early nineteenth century ‘designated a deviation from the natural order’, while a sea serpent ‘belonged to a natural kind and was not merely a freak of nature’.⁷³ It was very much in this sense that Barclay saw his sea serpent.

Home’s attitude to the great sea serpent is reminiscent of that of the Aristotelian natural philosophers for whom ‘[s]ingular events and strange phenomena were not challenges to Aristotelian natural philosophy; they were beyond its pale’.⁷⁴ There was no room in Home’s picture of the natural world for a creature that could not be easily slotted into its place in the *scala naturae* in the same way that the basking shark could fit neatly between cartilaginous fishes and whales. While the *scala naturae* is the organizing principle of Home’s discussion of the anatomy of the basking shark, it plays no role in Barclay’s treatment of the great sea serpent. Rather, Barclay was dismissive of such fanciful systems, stating bluntly that ‘if the characters of genus and species be to rest on such vague and conjectural evidence, as that which proves this animal a *Squalus*, we may as soon get acquainted with nature through the dreams of cosmogony, or the tales of a tub, as through the observations of natural history’.⁷⁵

CONCLUSION

What does the story of the Stronsay Beast tell us about the construction and validation of knowledge of the natural world in the early nineteenth century? Barclay and Home both

68 *Ibid.*, p. 427.

69 *Ibid.*, p. 430.

70 Home, *op. cit.* (note 24), p. 213.

71 Natalie Lawrence, ‘Making monsters’, in *Worlds of natural history* (ed. Helen Anne Curry, Nicholas Jardine, James Andrew Secord and Emma C. Spary), pp. 94–111 (Cambridge University Press, Cambridge, 2018), at p. 94.

72 Home, *op. cit.* (note 24), pp. 213, 217.

73 Burnett, *op. cit.* (note 2), p. 72.

74 Lorraine Daston, ‘Baconian facts, academic civility, and the prehistory of objectivity’, *Ann. Schol.* 8, 337–363 (1991), at p. 342.

75 Barclay, *op. cit.* (note 9), p. 429.

based their opinions on the testimony of witnesses and the careful examination of specimens. Yet they came to opposite conclusions. The key difference between the two lay in their different attitudes to the validity of these distinct types of evidence. Andrea Frisch has discussed 'the possibility of experiences as detachable from the people who have them—that is, as objective occurrences or events that have a claim to truth regardless of who testifies about them'.⁷⁶ This possibility is not one realized in the accounts of either Barclay or Home. Barclay gives considerable information regarding the witnesses alongside the testimonies reproduced in his paper, while Home uses the supposed suggestibility of the witnesses against them. They differed in that Barclay implicitly trusted in the authority of the witnesses and interpreted the material evidence accordingly. Home used quite the opposite methodology and discounted the testimony of the witnesses in favour of an incompatible conclusion based on his own interpretation of the specimens taken from the Beast that he had seen and touched. Barclay and Home therefore represent radically different methodological approaches to natural history in the early nineteenth century.

The two papers show fundamentally different patterns of mediation between the man of science, the physical evidence and the witnesses. Barclay and Home adopted strikingly different strategies for eliciting readers' assent to their truth claims. Barclay used a variety of means at his disposal to recruit the reader as a 'virtual witness' to the reality and nature of the creature: eye-witness accounts, textual descriptions, detailed anatomical drawings and sketches of imaginative reconstructions all played their parts. Home, on the other hand, relied largely on his own authority as an expert comparative anatomist. He did not lay out the evidence for the reader; he neither quotes from the witnesses' testimony nor presents images of the specimens on which he claims to have based his conclusions. Instead the reader was expected to assent to Home's expert opinion. The only image of the Beast is the reconstruction of the creature set beside a complete and intact basking shark for comparison. The true function of this image only becomes apparent when the picture is read in conjunction with the accompanying notes. This gives an object lesson in the way the evidence of the uninstructed observer's eyes could deceive unless the phenomenon was correctly interpreted for them by the expert. Read together, the picture and text give Home's virtuoso deconstruction of the Beast, stripping away its bizarre anatomical features to reveal the more familiar outline of a basking shark.

For Home the locus of authority is the expert, who is the only one entitled to correctly interpret the evidence, whereas Barclay allows a great deal more authority to the testimony of non-expert witnesses. On the other hand, Home's interpretation of the creature as a basking shark is framed in the context of the animal as an intermediate between the cartilaginous fish and the whales in the *scala naturae*, thus conforming to a system of nature that had dominated natural history for much of the eighteenth century but was already outdated and largely abandoned by the first decade of the nineteenth century. Barclay was more open to the facts presented to him, however bizarre, because he was not trying to fit them into a preconceived system. This is much closer to the neo-Baconian scientific methodology advocated by later nineteenth-century philosophers of science, such as John Herschel, than Home's approach. The possibility of such fierce debate over the Stronsay Beast between two established authorities on comparative anatomy strongly

⁷⁶ Andrea Frisch, *The invention of the eyewitness: witnessing and testimony in early modern France* (Department of Romance Studies at the University of North Carolina, Chapel Hill, 2004), p. 114.

supports Burnett's argument that the early nineteenth century was 'an era of instability and change, when established orders were under siege and taxonomic expertise was various and hotly contested'.⁷⁷ Home's espousal of the *scala naturae* alongside attitudes to scientific authority more often associated with the later nineteenth century tell us that simple models of progressive historical development in scientific practice and methodology fail to do justice to the complexity revealed by the sources. Indeed, the issues of whose testimony to trust and how evidence should be interpreted and presented to elicit belief are not only of historical interest, but are still very relevant today, when expert authority is being widely questioned on many fronts. Conflicts over the status of evidence and the locus of authority continue to bedevil the sciences in the twenty-first century. We may find we still have much to learn from the disputes of the natural historians of previous centuries.

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DATA ACCESSIBILITY

This article has no additional data.

⁷⁷ Burnett, *op. cit.* (note 2), p. 194.